

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): Tomas et al.

Application No.: 10/830,163

Filed: 04/21/2004

Title: Method for Preparing a Polycarbonate Oligomer Mixture at Low Temperature for Manufacturing Polycarbonate

Attorney Docket No.: GEPL.P-088

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Group Art Unit: 1711

Examiner: Boykin, Terressa M

Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

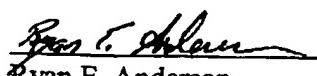
Response Under 37 CFR 1.111

Dear Sir:

This paper is filed in response to the Official Action mailed December 13, 2004 for the above-captioned application. Reconsideration of the application in light of the following remarks is respectfully requested.

The Examiner has rejected claims 1 - 61 under 35 USC § 102 (e) as being anticipated by Silvi et al., (US Pub 2003/0232957), hereinafter "Silvi". Applicants respectfully disagree with Examiner in that Silvi does not disclose several limitations contained within the rejected claims of the present application and submit that Examiner's rejection should be withdrawn.

I hereby certify that this paper and any attachments are being faxed to the USPTO fax number (703) 872-9306 on March 14, 2005.



Ryan E. Anderson

March 14, 2005
Date of Signature

All independent claims with the exception of the independent apparatus claim 52, contain the limitation, "introducing a melted dihydroxy composition to the reaction mixture contained within the equilibration system". *See* independent claims 1, 25, 50, 51, and 61. *See also* all dependant claims except for claims 53 - 60. Silvi makes no mention of introducing the dihydroxy compound to a reaction mixture as a melt. Silvi only recites, "Typically, the oligomeric polycarbonate employed is prepared in a step involving heating a dihydroxy aromatic compound with an ester substituted diaryl carbonate in the presence of a transesterification catalyst." *See* Silvi at paragraph [0061]. Further in examples 1-5 Silvi recites, "Solutions of oligomeric polycarbonate in methyl salicylate were prepared by equilibrating a mixture of bis(methyl salicyl) carbonate (BMSC), bisphenol A (BPA) and transesterification catalyst, tetrabutylphosphonium acetate (TBPA), at a temperature in a range between about 160 °C and about 220 °C in a batch melt reactor under a nitrogen atmosphere." *See* Silvi at paragraph [0098]. This does not equate to the present limitation of, "introducing a melted dihydroxy composition to the reaction mixture contained within the equilibration system," found in the process claims of the present invention and therefore Examiner's anticipation rejection should be withdrawn. On a side note, one benefit for adding the dihydroxy as a melt to the reaction mixture rather than as a solid is that it promotes random distribution of dihydroxy compositions within the polymer chain. *See* first paragraph on page 3 of the present specification.

Examiner rejects claims 2, 3, 4, 26, 27, and 28 under 102 (e) based on Silvi's examples 95 - 97 and 6 - 11. Applicants note that these examples are run in a **batch** melt reactor and are not indicative of the present invention since the present invention claims a **continuous** process. Further, applicants submit that such batch experiments provide little insight to the resulting properties (i.e. Yellowness Index) of a polycarbonate oligomer, polycarbonate, and/or polycarbonate article made by the process of the present invention. The present invention provides a benefit over Silvi in that the process is carried out in this continuous environment while taking care to minimize the degradation of the dihydroxy composition during the melting and equilibration stages. This results in an oligomer mixture and polycarbonate of better color (i.e. lower YI). *See* first paragraph on page 3 of the specification. *See also* third paragraph on page 21 of the specification. The melting of the dihydroxy in the present invention is carried out

such that the residence time of the dihydroxy composition in the melting apparatus is such that the resulting oligomer mixture has a YI of less than 10 and more preferably less than 5. This is much different than Silvi's dumping of the components into a batch reactor and allowing the components to equilibrate as described in the specification and examples without a hint as to monomer melting times.

Applicants submit that the apparatus claims of the present application are likewise allowable. Independent apparatus claim 52 of the present application recites the limitations of, "(a) one or more melters containing either separately or in combination an activated diaryl carbonate composition and a dihydroxy composition; (b) a equilibration vessel connected to the one or more melters and receiving melted activated diaryl carbonate composition and melted dihydroxy composition therefrom via one or more monomer feed lines." Applicants respectfully request Examiner to point to where in Silvi, one or more melters connected to a equilibration vessel receiving melted activated diaryl carbonate composition and melted dihydroxy composition therefrom, may be found or to withdraw her anticipation rejection of apparatus claims 51-60.

In response to Examiner's rejection under 35 USC § 103 (a) of claims 5 and 25 of the present application, Applicants submit that Silvi is not available as a reference under 35 USC § 103 against the present application pursuant to 35 USC § 103 (c). The presently claimed invention and Silvi were at the time the present invention was made subject to an obligation of assignment to General Electric Company.

Additional rejections were made by Examiner with regard to other dependent claims that were not directly addressed herein. Applicants submit that in view of the foregoing remarks said additional rejections are moot and that all claims are allowable over the cited reference. Further, once the Examiner removes her anticipation rejection, Silvi may not be used as a 35 USC § 103 reference against the present application. For these reasons, this application is

now considered to be in condition for allowance and such action is earnestly solicited. No fee or extension of time is believed to be due with the filing of this paper, however if such an extension is deemed due it is herein requested and the Commissioner is authorized to charge Deposit Account No. 07-0862.

Respectfully Submitted,

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